

WHAT IS CLAIMED IS

5

1. An optical scanning device comprising:  
a light source;  
a coupling lens coupling a beam emitted from  
said light source;

10

a light deflector deflecting the beam from  
said coupling lens at a uniform angular velocity;

15

a line-image imaging optical system disposed  
between said coupling lens and light deflector, and  
causing the beam to image a line image long along main  
scanning directions on or in the vicinity of a  
deflection reflective surface of said light deflector;

20

a scanning and imaging optical system causing  
the beam deflected by said light deflector to image a  
beam spot on a medium to be scanned; and

an optical housing in which said light source,  
coupling lens, light deflector, line-image imaging  
optical system and scanning and imaging optical system  
are disposed, and contained, and

25

wherein a plurality of holding and fixing  
datums for holding and fixing a light-source part

comprising said light source and coupling lens are provided in at least one of said light-source part and optical housing.

5

2. The device as claimed in claim 1, wherein:  
said light deflector is covered by a cover;  
10 said cover has a window for the beam to be incident on and exit from said light deflector; and  
a transparent cover member can be mounted on said window, and

wherein said holding and fixing datums are  
15 determined so that, by selectably using said holding and fixing datums, the beam deflected by said light deflector passes through said scanning and imaging optical system approximately at the same position  
whether or not said transparent cover member is mounted.

20

3. The device as claimed in claim 1, wherein  
25 said light-source part and line-image imaging optical

system are disposed on a common member.

5

4. The device as claimed in claim 1, wherein said coupling lens and line-image imaging optical system are formed integrally.

10

5. The device as claimed in claim 1, wherein said light-source part comprises a plurality of light-emitting sources.

15

20

6. The device as claimed in claim 3, wherein the beam emitted from said light-source part comprises an approximately parallel beam.

25

7. The device as claimed in claim 4, wherein the beam emitted from said light-source part comprises an approximately parallel beam.

5

8. An optical scanning device comprising:  
a light-source unit emitting a beam;  
10 a first imaging optical system causing the beam emitted by said light-source unit to image at a predetermined position;  
a deflector receiving the beam from said first imaging optical system and performing scanning with the  
15 beam; and  
a second imaging optical system causing the beam from said deflector to image a beam spot on a surface to be scanned, and  
wherein:  
20 said light-source unit, first imaging optical system, deflector and second imaging optical system are mounted in a box housing;  
a transparent member of an approximately parallel plate is disposed detachably so as to be  
25 located between said first imaging optical system and

deflector and between said deflector and second imaging optical system; and

a mounting position of said second imaging optical system can be changed according to whether or not said transparent member is provided.

10 9. The device as claimed in claim 8, wherein the mounting position of said second imaging optical system along main scanning directions can be changed according to whether or not said transparent member is used.

15

20 10. The device as claimed in claim 8, wherein the mounting position of said second imaging optical system along directions of an optical axis thereof can be changed according to whether or not said transparent member is used.

25

11. The device as claimed in claim 8, wherein  
the mounting position of said second imaging optical  
system along main scanning directions and directions of  
an optical axis thereof can be changed according to  
5 whether or not said transparent member is used.

10 12. An optical scanning device comprising:  
light emitting means for emitting a beam;  
coupling means for coupling the beam emitted  
by said light emitting means;  
light deflecting means for deflecting an  
15 incident beam at a uniform angular velocity;  
line-image imaging means for causing the beam  
coupled by said coupling means to image a line image  
long along main scanning directions on or in the  
vicinity of a deflection reflective surface of said  
20 light deflecting means;  
scanning and imaging means for causing the  
beam deflected by said light deflecting means to image a  
beam spot on a medium to be scanned; and  
an optical housing in which said light  
25 emitting means, coupling means, light deflecting means,

line-image imaging means and scanning and imaging means are disposed, and contained, and

wherein a plurality of holding and fixing datums for holding and fixing a light-source part comprising said light emitting means and coupling means are provided in at least one of said light-source part and optical housing.

10

13. An optical scanning device comprising:  
light-source means for emitting a beam;  
first imaging means for causing the beam  
emitted by said light-source means to image at a  
predetermined position;

deflecting means for receiving the beam from  
said first imaging means and performing scanning with  
the beam; and

second imaging means for causing the beam from  
said deflecting means to image a beam spot on a surface  
to be scanned, and

wherein:

said light-source means, first imaging means,  
deflecting means and second imaging means are mounted in

25

a box housing;

a transparent member of an approximately parallel plate is disposed detachably so as to be located between said first imaging means and deflecting means and between said deflecting means and second imaging means; and

a mounting position of said second imaging means can be changed according to whether or not said transparent member is provided.

10

14. An image forming apparatus comprising:  
an optical scanning device scanning a surface of a photosensitive body with a beam so as to form a latent image on said photosensitive body;

said photosensitive body;

a developing device developing the latent image so as to form a visible image;

a transferring device transferring the visible image to a sheet recording medium; and

a fixing device fixing the visible image onto the sheet recording medium, and

wherein said optical scanning device

25



comprises:

a light source;

a coupling lens coupling a beam emitted from  
said light source;

5 a light deflector deflecting the beam from  
said coupling lens at a uniform angular velocity;

a line-image imaging optical system disposed  
between said coupling lens and light deflector, and  
causing the beam to image a line image long along main  
10 scanning directions on or in the vicinity of a  
deflection reflective surface of said light deflector;

a scanning and imaging optical system causing  
the beam deflected by said light deflector to image a  
beam spot on a medium to be scanned; and

15 an optical housing in which said light source,  
coupling lens, light deflector, line-image imaging  
optical system and scanning and imaging optical system  
are disposed, and contained, and

wherein a plurality of holding and fixing  
20 datums for holding and fixing a light-source part  
comprising said light source and coupling lens are  
provided in at least one of said light-source part and  
optical housing.

25

15. An image forming apparatus comprising:
- an optical scanning device scanning a surface of a photosensitive body with a beam so as to form a latent image on said photosensitive body;
  - 5       said photosensitive body;
  - a developing device developing the latent image so as to form a visible image;
  - a transferring device transferring the visible image to a sheet recording medium; and
  - 10       a fixing device fixing the visible image onto the sheet recording medium, and
  - wherein said optical scanning device comprises:
    - a light-source unit emitting a beam;
    - 15       a first imaging optical system causing the beam emitted by said light-source unit to image at a predetermined position;
    - a deflector receiving the beam from said first imaging optical system and performing scanning with the
    - 20       beam; and
    - a second imaging optical system causing the beam from said deflector to image a beam spot on a surface to be scanned, and
    - wherein:
    - 25       said light-source unit, first imaging optical

system, deflector and second imaging optical system are mounted in a box housing;

a transparent member of an approximately parallel plate is disposed detachably so as to be  
5 located between said first imaging optical system and deflector and between said deflector and second imaging optical system; and

a mounting position of said second imaging optical system can be changed according to whether or  
10 not said transparent member is used.